

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 April 2003 (17.04.2003)

PCT

(10) International Publication Number
WO 03/030962 A2

(51) International Patent Classification⁷:

A61M

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(21) International Application Number: PCT/US02/31870

(22) International Filing Date: 4 October 2002 (04.10.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/327,514 5 October 2001 (05.10.2001) US

(71) Applicant: MEDICAL COMPONENTS, INC.
[US/US]; 1499 Delp Drive, Harleysville, PA 19438
(US).

(72) Inventor: SCHWEIKERT, Timothy; 121 North Park
Drive, Levittown, PA 19054 (US).

(74) Agent: MAENNER, Joseph, E.; Monte & McGraw, P.C.,
P.O. Box 650, 4007 Skippack Pike, Skippack, PA 19474
(US).

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

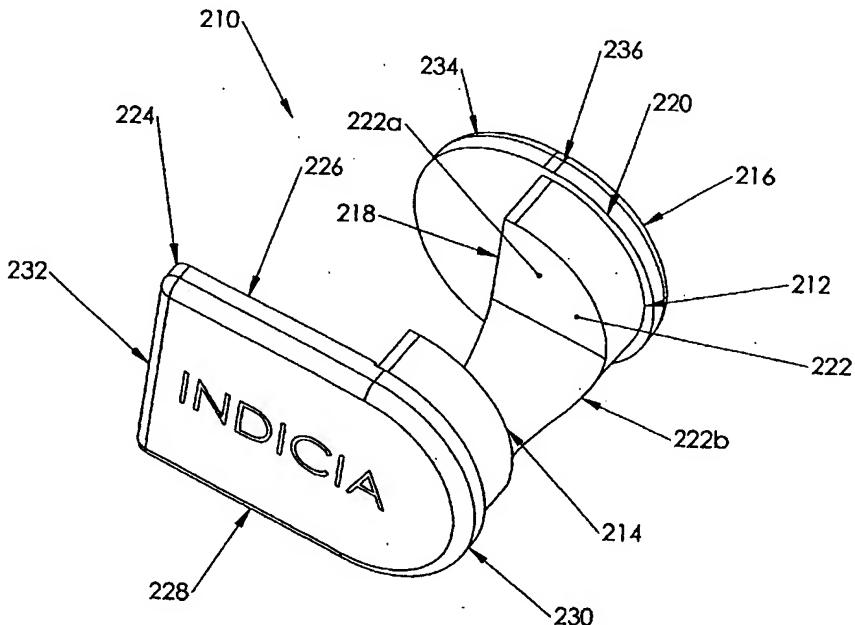
— without international search report and to be republished
upon receipt of that report

[Continued on next page]

(54) Title: CATHETER INFORMATION RING



WO 03/030962 A2



(57) Abstract: An information ring for use with a catheter is disclosed. The information ring includes a body having a first end and a second end. The body has a first body face extending between the first end and the second end, and a second, generally convex face extending between the first end and the second end. The body has an opening extending therethrough between the first body face and the second face. A first indicia portion is located at the first end. The first indicia portion has a first indicia face sized to allow indicia to be printed on the first indicia face.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Catheter Information Ring

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present invention claims priority from U.S. Provisional Patent Application Serial No. 60/327,514, filed October 5, 2001.

BACKGROUND OF THE INVENTION

[0002] Catheters for the introduction or removal of fluids may be located in various venous locations and cavities throughout the body for the introduction or removal of such fluids. Such catheterization may be performed by using a single catheter having multiple lumens. A typical example of a multiple lumen catheter is a dual lumen catheter in which a first lumen introduces fluids and a second lumen removes fluids. These catheters are very useful for procedures such as hemodialysis, wherein blood is removed from a patient through the first lumen for processing in a hemodialysis machine, and the processed blood is returned to the patient through the second lumen. Alternatively, multiple catheters, each having a single lumen, may be inserted in multiple locations in the patient, such as in each femoral vein.

[0003] Catheters are manufactured in different sizes and from different materials depending on the circumstances of their use. For example, smaller catheters are used on smaller patients, and different materials may be used depending on whether the catheter is intended to be in the patient for a short period of time, such as several hours or days, or for an extended period of time, such as weeks or months.

[0004] Catheters typically include indicia printed on the extension tubes that provides vital information such as the size, priming volume, and recommended as well as contra-indicated cleaning solutions to use around the catheter entrance to the patient. For example, some cleaning fluids can actually dissolve certain types of polyurethane materials from which some catheters are constructed. Text information is placed on the extension tubes to warn the user not to use such cleaning fluids.

[0005] The information printed on the extension tubes may vary depending on the intended catheter use. However, one drawback to this approach is that text size and clarity is limited, since the extension tubes are tubular and are typically translucent. Additionally, the text applied to the extension tubes is susceptible to rubbing off over time. Further, information such as priming volume may be printed on the catheter, such as on the extension tube. If a repair is necessary that requires a luer to be removed and a new, replacement luer installed onto the extension tube, the priming volume has changed, because the extension tube has been shortened as a result of the luer replacement. It would be desirable to provide a replaceable component with the catheter that can indicate the correct priming volume after such a replacement.

[0006] Further, it would be desirable to provide a surface on a catheter on which important information may be printed which may be easily read by the user and which will not wear off during the life of the catheter. Further, it would be beneficial to provide an information ring that may be removed from a catheter, and a new information ring installed on the catheter without having to disassemble any other portion of the catheter.

BRIEF SUMMARY OF THE PRESENT INVENTION

[0007] The present invention provides an information ring. The information ring comprises a body having a first end and a second end. The body has a first body face extending between the first end and the second end, and a second, generally convex face extending between the first end and the second end. The body has an opening extending therethrough between the first body face and the second face. A first indicia portion is located at the first end. The first indicia portion has a first indicia face sized to allow indicia to be printed on the first indicia face.

[0008] The present invention also provides a conduit assembly. The conduit assembly includes a conduit having a first end and a second end and an information ring. The information ring includes a body having a first end and a second end. The body has a first body face extending between the first end and the second end, and a second, generally convex face extending between the first end and the second end. The body has an opening extending therethrough between the first body face and the second face. A first indicia portion is located at the first end. The first indicia portion has a first indicia face sized to allow indicia to be printed on the first indicia face. The assembly further includes a conduit clamp having first and second openings along an axis. The information ring is disposed such that the channel is along the axis between the first and second openings. The conduit extends through the first and second openings and the channel along the axis.

[0009] Also, the present invention provides a method of inserting an information ring onto a catheter assembly. The method comprises providing a conduit assembly comprising a conduit having a first end and a second end. A first fitting is connected to the first end and a second fitting is connected to the second end. The assembly further includes a conduit clamp adapted to releasably retain the

information ring over the conduit. The conduit is disposed within an opening in the conduit clamp. The method further includes providing an information ring comprising a body having a first end and a second end. The body has a first body face extending between the first end and the second end, and a second, generally convex face extending between the first end and the second end. The body further has an opening extending therethrough between the first body face and the second face and a first indicia portion having a first face extending from the first end. The first indicia portion is sized to allow indicia to be printed on the first face. The method further comprises installing the information ring in the conduit assembly, such that the conduit is disposed within the opening and the conduit clamp releasably retains the information ring over the conduit.

[0010] Further, the present invention provides a catheter information ring. The ring comprises a first portion having a first connecting end and a first free end. The first connecting end includes at least one of a male connector and a female connector and the first free end has a first indicia face. The ring further comprises a second portion having a second connecting end and a second free end. The second connecting end has at least the other of a mating male connector and a mating female connector. The second free end has a second face. When the at least one of the male connector and the female connector is engaged with the at least one of the mating male connector and the mating female connector, a generally circular opening is formed in the ring such that a catheter conduit is sized to fit within the opening.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The foregoing summary, as well as the following detailed description of preferred embodiments of the invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown. In the drawings, the same reference numerals are employed for designating the same elements throughout the several figures. In the drawings:

[0012] Figure 1 shows a perspective view of an information ring according to a first embodiment of the present invention.

[0013] Figure 2 shows an opposing perspective view of the information ring shown in Figure 1.

[0014] Figure 3A shows a perspective view of information ring shown in Figures 1 and 2 connected to a catheter assembly.

[0015] Figure 3B shows an opposing perspective view of the information ring shown in Figures 1 and 2 connected to the catheter assembly.

[0016] Figure 4 shows a perspective view of an information ring according to a second embodiment of the present invention.

[0017] Figure 5 shows an opposing perspective view of the information ring shown in Figure 4.

[0018] Figure 6 shows a perspective view of an information ring according to a third embodiment of the present invention.

[0019] Figure 7 shows an opposing perspective view of the information ring shown in Figure 6.

[0020] Figure 8 shows a perspective view of an information ring according to a fourth embodiment of the present invention.

[0021] Figure 9 shows an opposing perspective view of the information ring shown in Figure 8.

[0022] Figure 10 shows a side view of a catheter assembly incorporating the information ring shown in Figures 4 and 5.

[0023] Figure 11 shows a sectional view of the catheter assembly of Figure 10.

[0024] Figure 12 shows a perspective view of an information ring according to a fifth embodiment of the present invention.

[0025] Figure 12A shows an enlarged view of the connection device on the information ring shown in Figure 12.

[0026] Figure 13 shows an opposing perspective view of the information ring shown in Figure 12.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0027] In the drawings, like numerals indicate like elements throughout. Certain terminology is used herein for convenience only and is not taken to be a limitation on the present invention. The words "right", "left", "outwardly", and "inwardly" designate directions in the drawings to which reference is made. The words "proximal" and "distal" refer to directions away from and closer to, respectively, the insertion tip of a catheter in the catheter assembly described according to the present invention. The terminology includes the words above specifically mentioned, derivatives thereof, and words of similar import. The following describes preferred embodiments of the invention. However, it should be

understood based on this disclosure that the invention is not limited by the preferred embodiments described herein.

[0028] A first embodiment of an information ring 110 for use with a catheter according to the present invention is shown in Figures 1 and 2. The information ring 110 includes a body 112 having a first end 114 and a second end 116. A generally planar first face 118 extends between the first end 114 and the second end 116. A second face 120, preferably generally rounded, extends between the first end 114 and the second end 116. A generally circular opening 122 extends through the body 112 between the first face 118 and the second face 120. A generally elongated first indicia portion 124, which is located at the first end 114 of the body 112, includes an indicia face 128, on which identifying indicia is printed. As can be seen from Figure 1, the first indicia portion 124 extends generally orthogonally from the first face 118, although those skilled in the art will recognize that the first indicia portion 124 may extend other than orthogonally from the first face 118. A second indicia portion 130 is located at the second end 116 of the body 112 and includes an indicia face 132 on which identifying indicia is printed. The second indicia portion 130 preferably is generally round in shape, as shown in Figure 2, but the second indicia portion 130 may have other shapes, such as a generally elongated shape similar to the first indicia portion 124.

[0029] Indicia, shown on indicia faces 128, 132 in Figures 1 and 2, respectively, may be printed in any direction, or along any curvature, as desired. Further, the indicia may be information such as priming volume and/or site care warnings about the use of the device to which the information ring 110 is attached. Further, indicia may include warnings related to the contents of the catheter or other general information related to the catheter. The types of indicia provided are for

example only and are not meant to be limiting. Such information and/or site care warnings may be in the form of letters, numbers, symbols, colors, texture, and the like. Typically, the indicia is printed in a large enough font so that a user may easily read the information printed on the information ring 110.

[0030] The information ring 110 is part of a conduit assembly 150, which, for example, is part of a catheter assembly, such as that shown in Figure 3. The conduit assembly 150 is comprised of the information ring 110; a conduit 160, such as a catheter extension tube; and a conduit clamp 170. The conduit assembly 150 is typically used for medical purposes including, but not limited to: catheters, intravenous (IV) solutions, high flow blood administration sets, irrigation/urology products, pharmaceutical products, fluid dispensing systems, chamber mixing bags, formulator systems, infusion systems, interventional products, fluid collection systems used in radiology, and other products and uses.

[0031] The conduit 160 is typically a catheter extension tube, which is located at the proximal end of the catheter. With some well known catheters, such as the ASH SPLITCATH® catheter, where the catheter assembly contains two separate conduits 160, one for removal of fluids from the patient, and the other for returning fluids to the patient, each conduit 160 is preferably provided with its own information ring 110. For clarity, only one conduit 160 with an information ring 110 is described herein.

[0032] As shown in Figures 3A and 3B, the conduit 160 has a first, or proximal, end 162 and a second, or distal, end 164. Typically, the first end 162 is connected to a connection device 166, such as a luer, as shown. The second end 164 is typically connected to a hub 168, as shown. Also as shown in Figures 3A and 3B, the conduit clamp 170 is a clamp well known in the art. The conduit clamp 170 has

two generally elongated openings 172, 174, through which the conduit 160 extends, so that the conduit clamp 170 is retained on the conduit 160. Further, the conduit 160 passes through the opening 122 in the information ring 110 between the openings 172, 174 in the conduit clamp 170.

[0033] In order to remove the information ring 110 from the conduit 160, the conduit 160 is severed, such as by cutting. The conduit 160 is typically cut proximate the connection device 166, and the conduit 160 is pulled through the first opening 172 in the clamp 170 and the opening 122 in the information ring 110 so that the information ring 110 may be removed from the conduit assembly 150. A new information ring 110 is then provided, with the conduit 160 being pushed through the opening 122 in the new information ring 110 and the first opening 172 in the clamp 170. A new connection device 166 is then affixed to the conduit 160, securely locating the information ring 110 and the clamp 170 on the conduit 160 between the connection device 66 and the hub 168.

[0034] For the following second through fourth embodiments of the information ring according to the present invention which is described hereafter in detail, like or similar elements are identified by a similar three-digit number with the last two digits being identical and corresponding to like or similar elements of a second embodiment 210. For the second embodiment, the first digit is a "2"; for the third embodiment, the first digit is a "3"; and for the fourth embodiment, the first digit is a "4".

[0035] A second embodiment of an information ring 210 according to the present invention is shown in Figures 4 and 5. The information ring 210 includes a body 212 having a first end 214 and a second end 216. A first face 218 extends between the first end 214 and the second end 216. Preferably, the first face 218 is

generally planar, although those skilled in the art will recognize that the first face 218 may be other than planar. A generally rounded second face 220 extends between the first end 214 and the second end 216. A generally U-shaped channel 222 extends through the body 212 between the first face 218 and the second face 220. The channel 222 has an open portion 222a and a generally semi-circular closed portion 222b opposing the open portion 222a. A first indicia portion 224 is located at the first end 214 of the body 212, and includes an indicia face 228, on which identifying indicia is printed. The first indicia portion 224 has a first end 230 connected to the first end 214 of the body 212, and the first end 230 is preferably rounded, to complement the generally rounded second face 220 of the body 212. The first indicia portion 224 also has a second, free end 232 extending away from the body 212, and is preferably elongated in shape, although those skilled in the art will recognize that the free end 232 may be any shape. As shown in Figures 4 and 5, the first indicia portion 224 is generally disposed approximately orthogonally from the body 212, although those skilled in the art will recognize that the first indicia portion 224 may be disposed at other angles relative to the body 212.

[0036] A second indicia portion 234 is located at the second end 216 of the body 212, and includes an indicia face 236, on which identifying indicia is printed. As shown in Figures 4 and 5, the second indicia portion 234 has a radius that is preferably slightly larger than the radius of the second face 220. However, those skilled in the art will recognize that the radius of the second indicia portion 234 may be the same as or less than the radius of the second face 220.

[0037] Indicia, shown on indicia faces 228, 238 in Figures 4 and 5, respectively, may be printed in any direction, or along any curvature, as desired. Further, the indicia may be information such as priming volume and/or site care

warnings about the use of the device to which the information ring 210 is attached.

Further, the indicia may be warnings related to the contents of the catheter or other general information related to the catheter. The types of indicia provided are for example only and are not meant to be limiting. Such information and/or site care warnings may be in the form of letters, numbers, symbols, colors, texture, and the like. Typically, the indicia is printed in a large enough font so that a user may easily read the information printed on the information ring 210.

[0038] A third embodiment of an information ring 310 according to the present invention is shown in Figures 6 and 7. The information ring 310 is similar to the information ring 210 as described above, but with a pair of tabs 340, 342 that extend from the body 312 toward each other partially across the open portion 322a of the channel 322. Although two tabs 340, 342 are shown, those skilled in the art will recognize that only one tab 340 need be used.

[0039] A fourth embodiment of the present invention of an information ring 410 according to the present invention is shown in Figures 8 and 9. The information ring 410 is similar to the information ring 210 described above, but with a second indicia portion 434 that is located at the second end 416 of the body 412, and includes an indicia face 436, on which identifying indicia is typically printed. As shown in Figure 9, the second indicia portion 434 is preferably the same generally elongated shape as the first indicia portion 424.

[0040] A catheter assembly 500 that uses an information ring 210, 310, 410 according to any of the above-described second through fourth embodiments is shown in Figures 10 and 11. For clarity, only the information ring 210 will be described with reference to the catheter assembly 500, although those skilled in the art will recognize

that either embodiment of the information rings 310, 410 may be similarly used in the catheter assembly 500.

[0041] As seen in Figures 10 and 11, the catheter assembly 500 includes a conduit 560, which is typically a generally circular tube that allows fluid flow between a proximal end 562 and a distal end 564. The conduit 560 is typically an extension tube located at the proximal end of a catheter. A connection device 566, such as a luer, is typically connected to the proximal end 562, and a hub 568 is typically connected to the distal end 564.

[0042] The information ring 210 is disposed over the conduit 560 such that the conduit 560 is disposed within the channel 122. A conduit clamp 570, which is well known to those skilled in the art, is also disposed over the conduit 560 and releasably retains the information ring 210 onto the conduit 560. The information ring 210 is sized to fit generally within the conduit clamp 570. The information ring 210 and the conduit clamp 570 are free to translate along the conduit 560 between the first and second ends 562, 564.

[0043] Referring to Figures 10 and 11, the conduit clamp 570 is shown in an open position. The conduit clamp 570 includes a generally elongated base 571 having a first end 572 and a second end 574. The first end 572 includes a first curved portion 576 having a generally elongated first opening 578 extending therethrough. A free end 580 of the first curved portion 576 includes a locking tang 582. The second end 574 includes a second curved portion 584 having a generally elongated second opening 586 extending therethrough. A line extending through the first and second openings 578, 586 forms a clamp axis 588. A free end 590 of the second curved portion 584 includes a generally elongated locking tab 592. A first clamp member 594 extends from the base 571 between the first and second openings 578, 586 toward

the clamp axis 588. A second clamp member 596 extends from the locking tab 592 toward the clamp axis 588. The first and second clamp members 594, 596 are generally offset from each other such that, when the clamp members 594, 596 are biased toward each other, each clamp member 594, 596 engages the conduit 560 such that the conduit 560 is pinched off, preventing fluid flow through the conduit 560. When the locking tab 592 is biased toward the clamp axis 588, the locking tab 592 engages the locking tang 582, securing the clamp 570 and pinching off the conduit 560 via the clamp members 594, 596.

[0044] Referring still to Figures 10 and 11, the conduit 560 extends through the first and second openings 578, 586 in the conduit clamp 570 along the clamp axis 588. The information ring 210 is disposed such that the conduit 560 extends through the channel 222 of the information ring 210, and the information ring 210 is between the first and second openings 578, 586. The body 212 is disposed such that the rounded second face 220 of the body 212 is loosely engageable against the second curved portion 584 so that the generally rounded second face 220 is nestled in the second curved portion 584. The clamps 594, 596 loosely engage the first face 218, preventing the information ring 210 from axially traversing along the conduit 560 toward the locking tang 582, potentially interfering with the engagement of the clamps 594, 596 with the conduit 560.

[0045] The information ring 210 may be inserted onto a conduit assembly 500 that does not initially include an information ring 210. Alternatively, a first information ring 210 according to the present invention may be removed from the conduit assembly 500 without removing either the luer lock 566 or the hub 568 from the conduit 560, and a second information ring 210 may be installed in the conduit assembly 500 in place of the now-removed first information ring 210. The following

process will describe only the method for removing a first information ring 210 and replacing a second information ring 210, although those skilled in the art will recognize that the method for only installing an information ring 210 is inherent in the last several steps of the removal and replacement method.

[0046] The conduit assembly 500 is grasped and the conduit 560 is drawn through at least one of the openings 578, 586 in the conduit clamp 570 toward the other opening 586, 578 in the conduit clamp 570, such that the conduit 560 between the first and second openings 578, 586 is pulled away from the clamp axis 588. The locking tab 592 may need to be biased away from the locking tang 582 to provide sufficient room to draw out the conduit 560. When the conduit assembly 500 is a catheter assembly, the conduit 560 is a soft, pliable material, allowing the conduit 560 to easily bend. The conduit 560 is bent away from the base 571 of the conduit clamp 570 sufficiently to allow the information ring 210 to be removed from the conduit clamp 570. The conduit 560 is laterally removed from the information ring 210 by pulling the conduit 560 through the channel 222 and out the open end 222a of the channel 222.

[0047] A new information ring 210 is then inserted into the space between the conduit 560 and the base 571. The conduit 560 is disposed in the open end 222a of the channel 222 and retained against the closed end 222b of the channel 222. The second face 218 of the body 212 is retained against the second curved portion 584 of the conduit clamp 570. The conduit 560 is then advanced through at least one of the first and second openings 578, 586 so that the conduit 560 extends along the clamp axis 588 through both openings 578 and 586 in the conduit clamp 570. The conduit clamp 570 now releasably retains the information ring 210 on the conduit 560.

[0048] Those skilled in the art will recognize that the operation and use of the third and fourth embodiments of the information rings 310, 410 is similar to the operation and use of the second embodiment of the information ring 210 as described above.

[0049] A fifth embodiment of an information ring 600 according to the present invention is shown in Figures 12, 12A, and 13. The information ring 600 is comprised of two separate pieces that preferably releasably engage with each other to form a ring having a generally circular opening extending therethrough.

[0050] The information ring 600 is comprised of a first connecting portion 602 that has a connecting end 604 and a free end 606, and a second connecting portion 608 that has a connecting end 610 and a free end 612. The connecting end 604 of the first connecting portion 602 preferably has at least one of a male connector 614 or female connector 616, such as a tab or a slot, respectively, as shown in detail in Figure 12A. The connecting end 610 of the second connecting portion 608 preferably has at least one of the other of the male connector 614 or the female connector 616, so that, when the first connecting portion 602 and the second connecting portion 608 are brought together, the male connector 614 engages with the female connector 616, releasably securing the first connecting portion 602 and the second connecting portion 608 together. As shown in Figures 12, 12A, and 13, the first connecting portion 602 includes the male connector 614 and the second connecting portion 608 includes the female connector 616, although those skilled in the art will recognize that other combinations may be used.

[0051] As shown in Figure 12A, the male connector 614 may be a tapered polygon, such as pyramidal or frusto-pyramidal. The male connector 614 and the female connector 626 allow the first connecting portion 602 and the second

connecting portion 608 to be cyclically separated and removed from each other such that the information ring 600 may be removed from a catheter assembly such as the catheter assembly 500 described above, and reused on that or another catheter assembly.

[0052] Alternatively, although not shown, the male connector 614 may be other shapes, such as conical, frusto-conical, or any other shape that can engage a mating female connector in a press fit. However, those skilled in the art will recognize that other methods of connecting the first connecting portion 602 and the second connecting portion 608 may be used. For example, the first connecting portion 602 and the second connecting portion 608 may have interlocking male and female connectors (not shown) in a snap-fit engagement, for example, such that, once the male connector is inserted into the female connector, the only way to separate the first connecting portion from the second connecting portion is to destroy at least one of the first connecting portion 602 and the second connecting portion 604, precluding reuse of the information ring 600.

[0053] The first connecting portion 602 has a generally semi-circular opening 620, with the connectors 614 of the first connecting portion 602 being located at the connector end 604 on either side of the opening 620. The second connecting portion 608 also has a generally semi-circular opening 622, with the connectors 616 of the second connecting portion 608 also being located at the connector end 610 on either side of the opening 622 such that, when the connector ends 604, 610 of each of the first connecting portion 602 and the second connecting portion 608 are brought together and the male and female connectors 614, 616 are engaged, a generally circular opening is formed. The opening is sized to allow a conduit, such as a catheter extension tube, to be retained inside the opening.

[0054] The free end 606 of the first connecting portion 602 has an indicia portion 630 that extends generally orthogonally from the first connecting portion 602. The indicia portion 630 has an indicia face 632 that is disposed distally from the connecting end 604, with indicia being printed on the indicia face 632. The free end 612 of the second connecting portion 608 may also have an indicia portion 640 that extends generally orthogonally from the second connecting portion 608. The indicia portion 640 has an indicia face 642 that is disposed distally from the connecting end 610, with indicia being printed on the indicia face 642.

[0055] Preferably, each information ring 210, 310, 410, 600 is constructed from a rigid or a semi-rigid plastic, such as ABS, polyvinyl chloride (PVC), polypropylene, or other suitable material, although those skilled in the art will recognize that the information ring 210, 310, 410, 600 may be made from other materials as well. Preferably, the material used to construct the information ring 210, 310, 410, 600 is generally at least slightly pliable, to allow manipulation of the information ring 210, 310, 410, 600 without the likelihood of breaking the information ring 210, 310, 410, 600.

[0056] It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

CLAIMS

WHAT IS CLAIMED IS:

1. An information ring comprising:

a body having a first end and a second end, wherein the body includes:

a first body face extending between the first end and the second end; and

a second body face extending between the first end and the second end, and wherein the body has an opening extending therethrough between the first body face and the second body face;

and

a first indicia portion at the first end of the body, wherein the first indicia portion has a first indicia face sized to allow indicia to be printed on the first indicia face.

2. The information ring according to claim 1, further comprising a second indicia portion at the second end having a second indicia face.

3. The information ring according to claim 2, wherein the second indicia face of the second indicia portion includes indicia printed on the second indicia face.

4. The information ring according to claim 2, wherein the second indicia portion is generally circular.

5. The information ring according to claim 2, wherein the second indicia portion is generally elongated.

6. The information ring according to claim 2, wherein the second indicia portion is integral with the body.

7. The information ring according to claim 1, wherein the indicia is printed on the first indicia face.

8. The information ring according to claim 1, wherein the first indicia portion is generally circular.
9. The information ring according to claim 1, wherein the first indicia portion is generally elongated.
10. The information ring according to claim 1, wherein the opening is generally circular.
11. The information ring according to claim 1, wherein the opening is a generally U-shaped channel.
12. The information ring according to claim 11, wherein the body further comprises a first tab extending into the channel.
13. The information ring according to claim 12, wherein the body further comprises a second tab extending into the channel toward the first tab.
14. The information ring according to claim 11, wherein the channel has an open portion and an opposing closed portion, and wherein the channel is sized to allow a conduit to be inserted into the open portion and retained against the closed portion.
15. The information ring according to claim 1, wherein the first body face is generally planar.
16. The information ring according to claim 1, wherein the first indicia portion is integral with the body.
17. The information ring according to claim 1, wherein the body has a first body portion proximate the first end and a second body portion proximate the second end, wherein the first body portion has one of a male and a female connector and the second body portion has the other of the male connector and the female connector, wherein the male connector is insertable into the female connector, such that the first body portion is connected to the second body portion.

18. The information ring according to claim 17, wherein the male connector engages the female connector with a press fit.

19. A conduit assembly comprising:

a conduit having a first end and a second end;

an information ring comprising:

a body having a first end and a second end, wherein the body has a first body face extending between the first end and the second end, and a second body face extending between the first end and the second end, and wherein the body has an opening extending therethrough between the first body face and the second body face; and

a first indicia portion at the first end of the body, wherein the first indicia portion has a first indicia face sized to allow indicia to be printed on the first face;

and

a conduit clamp having first and second openings along an axis, wherein the information ring is disposed such that the opening extending between the first body face and the second body face of the information ring is along the axis between the first and second openings of the conduit clamp and wherein the conduit extends through the first and second openings of the conduit clamp and the channel opening extending between the first body face and the second body face of the information ring along the axis.

20. The conduit assembly according to claim 19, wherein the conduit further comprises a first fitting fixedly connected to the first end of the conduit and a second fitting fixedly connected to the second end of the conduit.

21. The conduit assembly according to claim 20, wherein the information ring is configured to allow the conduit to be removed from the opening extending between the first body face and the second body face of the information ring without removing either of the first and second fittings from the conduit.
22. The conduit assembly according to claim 19, wherein indicia is printed on the indicia face.
23. The conduit assembly according to claim 19, further comprising a second indicia portion having a second indicia face provided at the second end of the body of the information ring.
24. The conduit assembly according to claim 23, wherein the second indicia face of the second indicia portion is sized to allow indicia to be printed on the second indicia face.
25. The conduit assembly conduit assembly according to claim 23, wherein the second indicia portion is generally circular.
26. The conduit assembly according to claim 23, wherein the second indicia portion is generally elongated.
27. The conduit assembly conduit assembly according to claim 23, wherein the second indicia portion is integral with the body.
28. The conduit assembly according to claim 19, wherein the first indicia portion is generally circular.
29. The conduit assembly according to claim 19, wherein the first indicia portion is generally elongated.
30. The conduit assembly according to claim 19, wherein the body further comprises a first tab extending into the opening extending between the first body face and the second body face of the information ring.

31. The conduit assembly according to claim 30, wherein the body further comprises a second tab extending into the opening extending between the first body face and the second body face of the information ring toward the first tab.

32. The conduit assembly according to claim 19, wherein the opening extending between the first body face and the second body face of the information ring is a generally U-shaped channel having an open portion and an opposing closed portion, and wherein the opening extending between the first body face and the second body face of the information ring is sized to allow a conduit to be inserted into the open portion and retained against the closed portion.

33. The conduit assembly according to claim 19, wherein the first body face is generally planar.

34. The conduit assembly according to claim 19, wherein the first indicia portion is integral with the body.

35. A method of inserting an information ring onto a catheter assembly comprising:

providing a conduit assembly comprising:

a conduit having a first end and a second end, wherein a first fitting is connected to the first end and a second fitting is connected to the second end; and

a conduit clamp adapted to releasably retain the information ring over the conduit, wherein the conduit is disposed within opening in the conduit clamp;

providing an information ring comprising:

a body having a first end and a second end, wherein the body has a first body face extending between the first end and the second end, and a second

body face extending between the first end and the second end, and wherein the body has an opening extending therethrough between the first body face and the second body face; and

a first indicia portion having a first face extending from the first end of the body of the information ring, wherein the first indicia portion is sized to allow indicia to be printed on the first face;

and

installing the information ring in the conduit assembly, such that the conduit is disposed within the opening between the first body face and the second body face of the information ring and the conduit clamp releasably retains the information ring over the conduit.

36. A catheter information ring comprising:

a first portion having a first connecting end and a first free end, wherein the first connecting end includes at least one of a male connector or a female connector and wherein the first free end has a first face sized to enable indicia to be printed thereon; and

a second portion having a second connecting end and a second free end, wherein the second connecting end has at least the other of a mating male connector or a mating female connector and wherein the second free end has a second face;

wherein, when the at least one of the male connector or the female connector is engaged with the at least one of the mating male connector or the mating female connector, a generally circular opening is formed in the ring such that a catheter conduit is sized to fit within the opening.

37. The catheter information ring according to claim 36, wherein the first face has indicia thereon.
38. The catheter information ring according to claim 36, wherein the second face has indicia thereon.
39. The catheter information ring according to claim 36, wherein the at least one of the male connector or the female connector is engaged with the other one of the mating male connector or the mating female connector with a press fit.
40. The catheter information ring according to claim 36, wherein the first portion is cyclically removable from and connectable with the second portion.

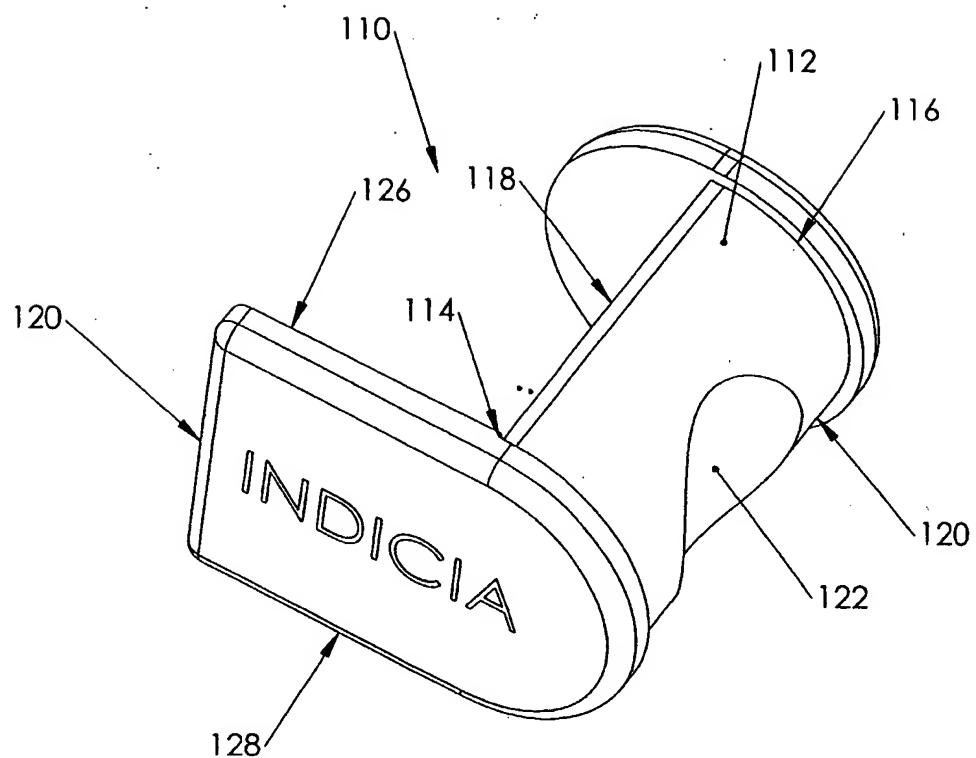


FIGURE 1

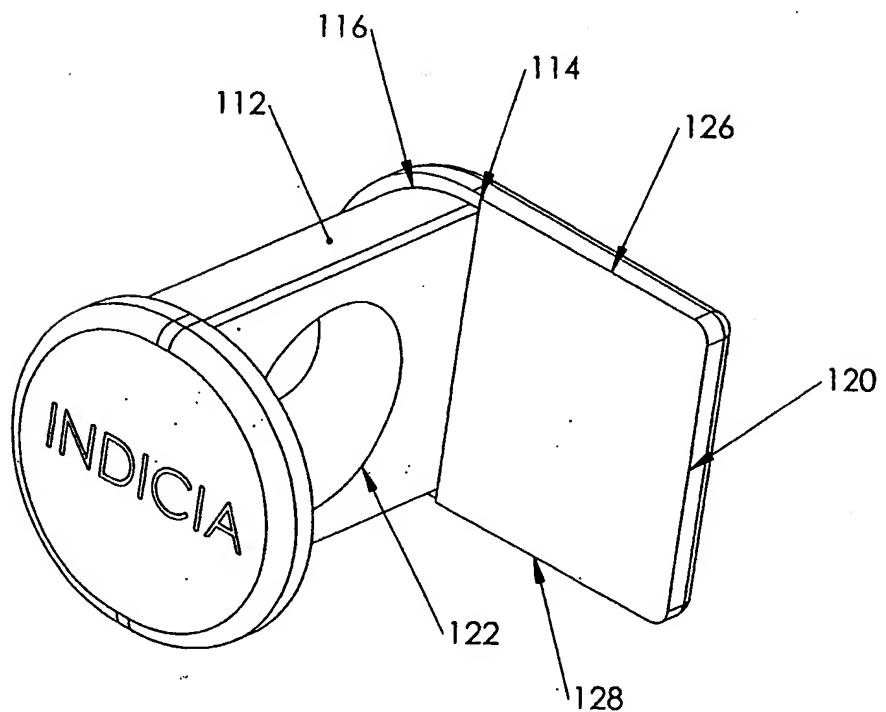


FIGURE 2

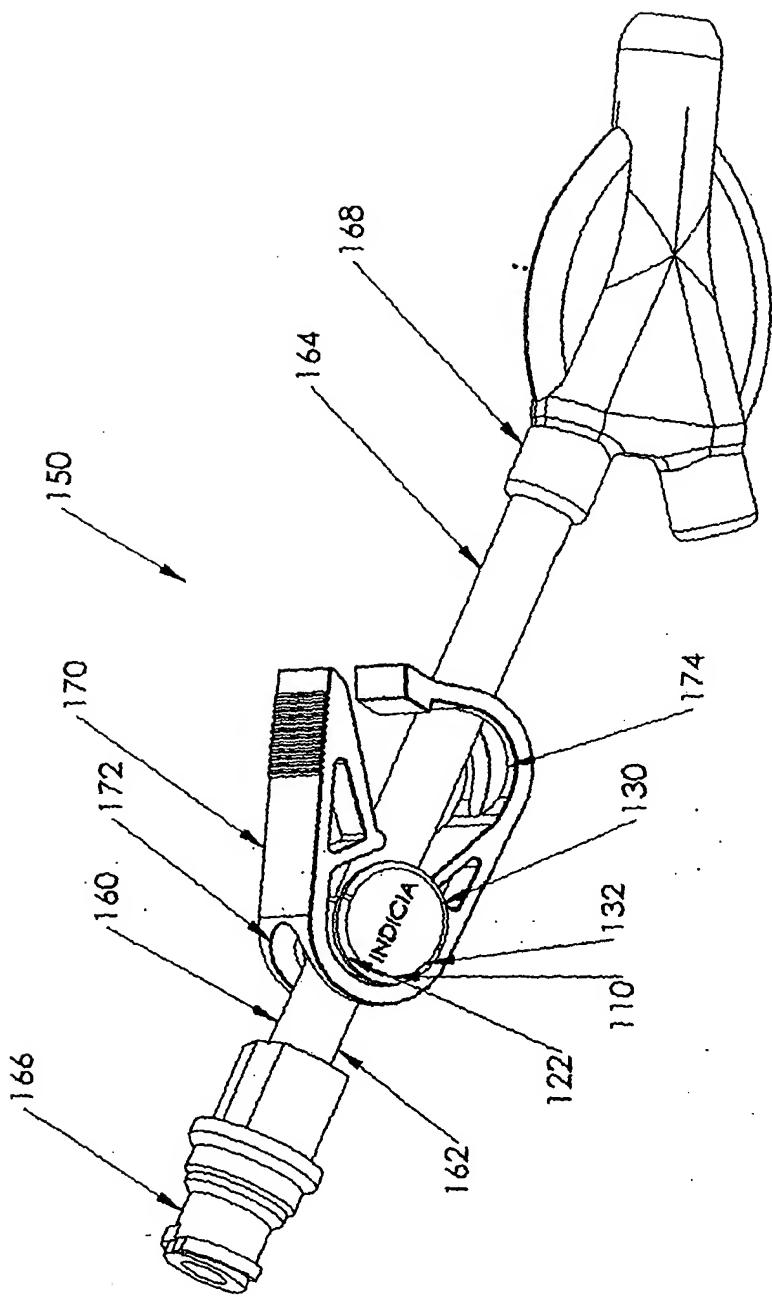


FIGURE 3A

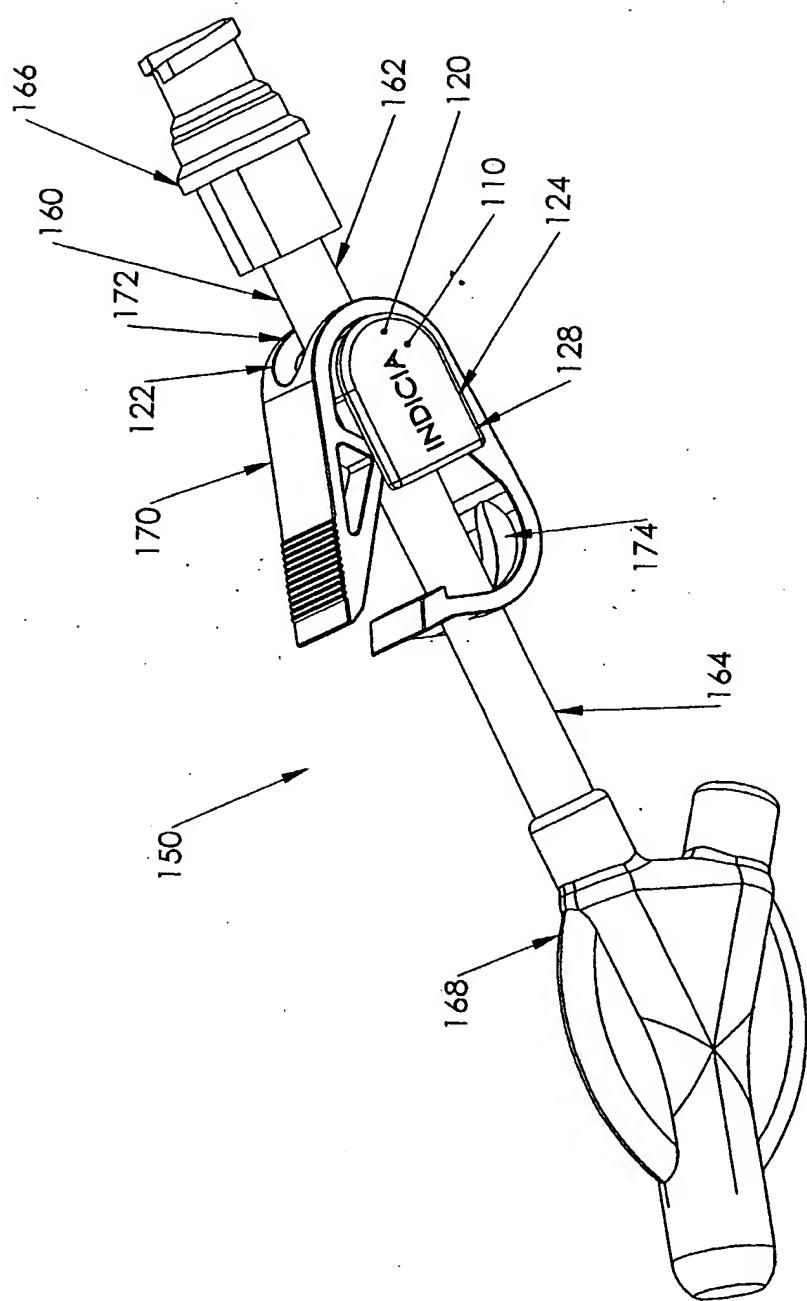


FIGURE 3B

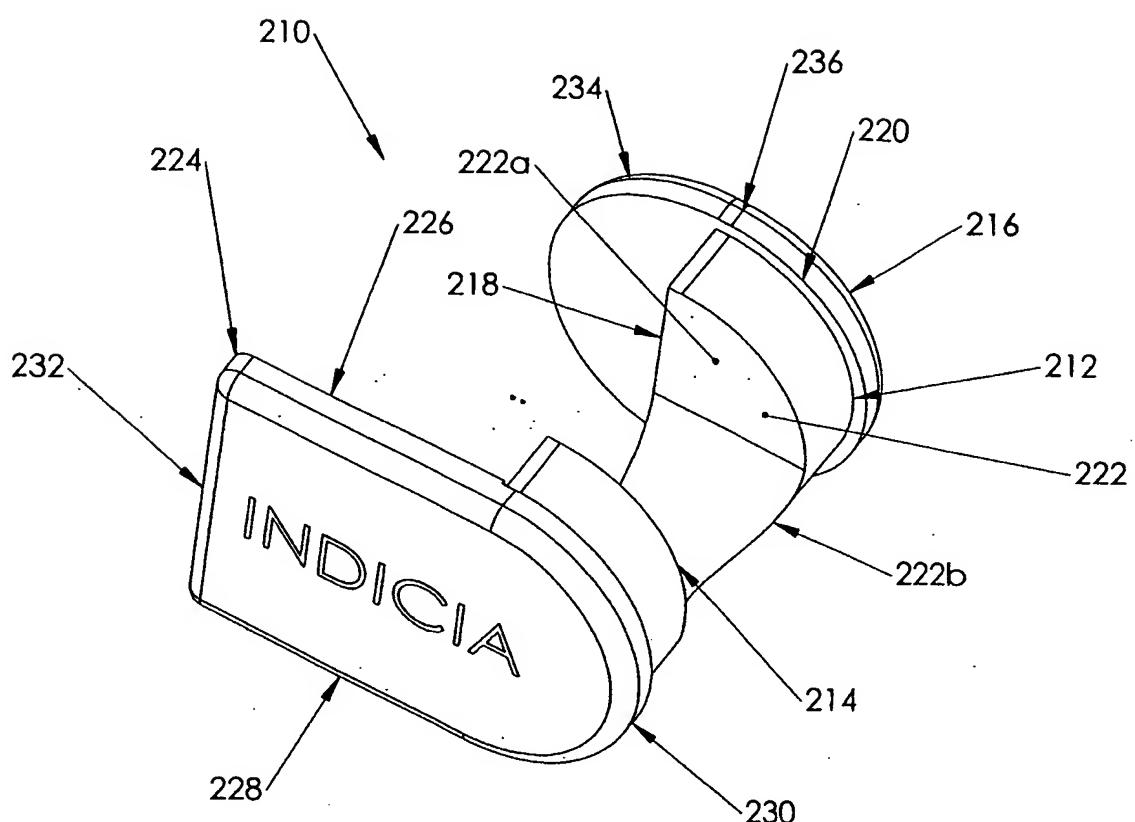


FIGURE 4

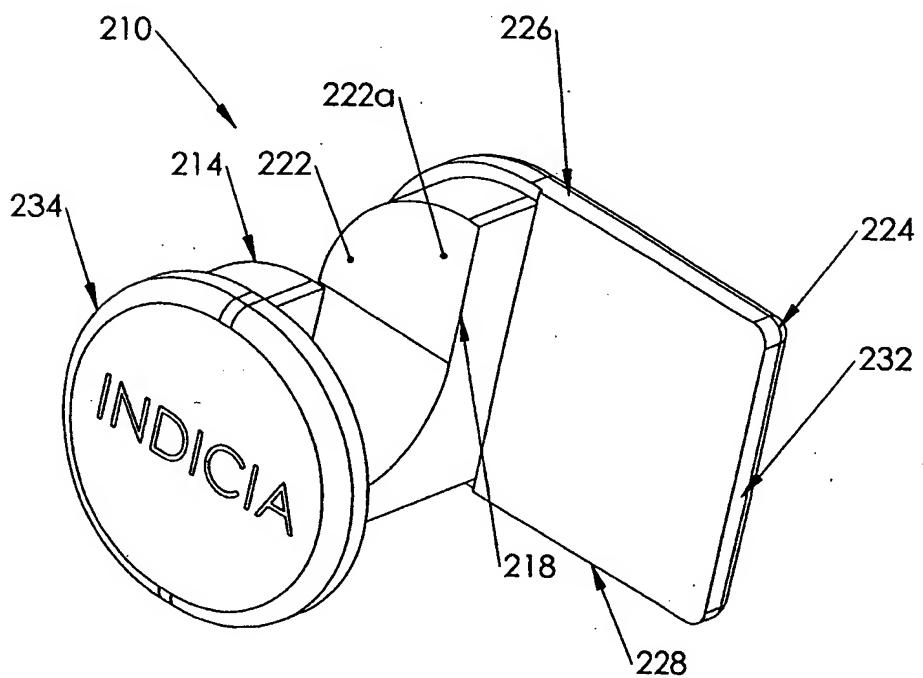


FIGURE 5

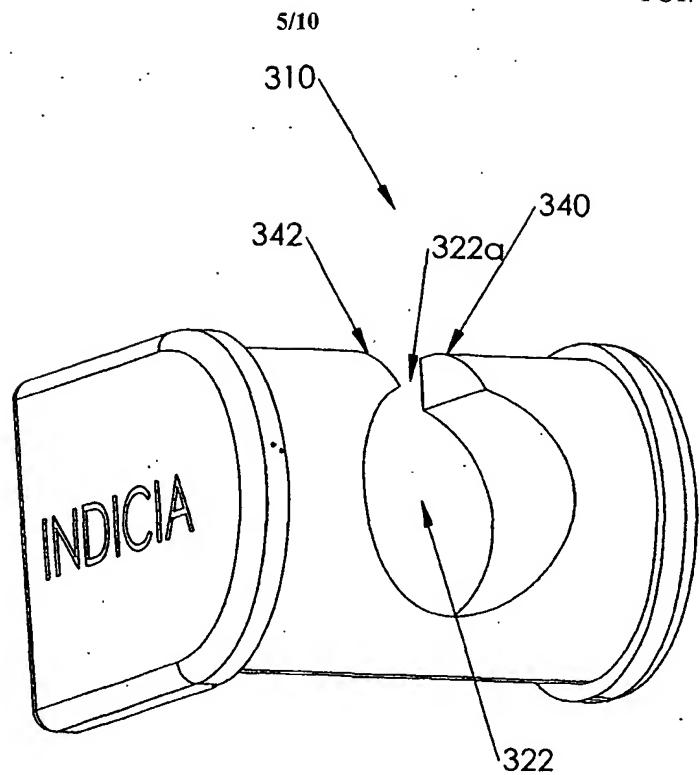


FIGURE 6

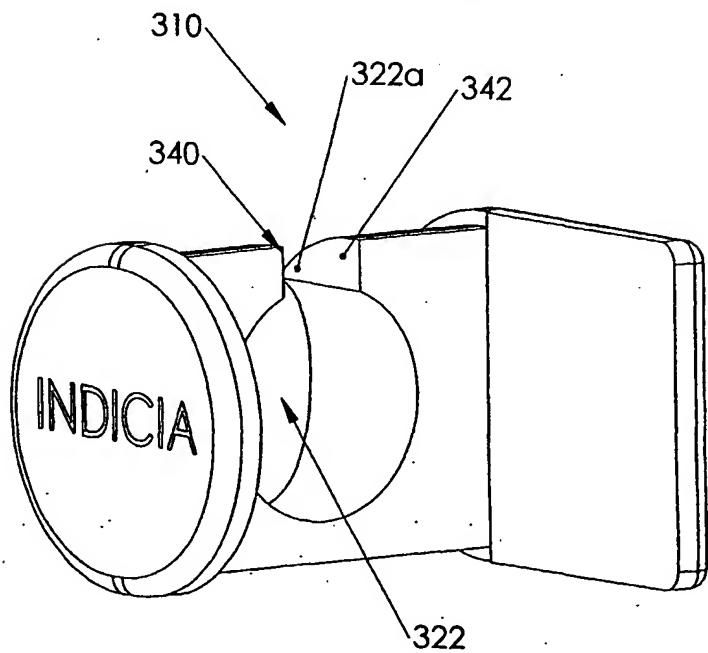


FIGURE 7

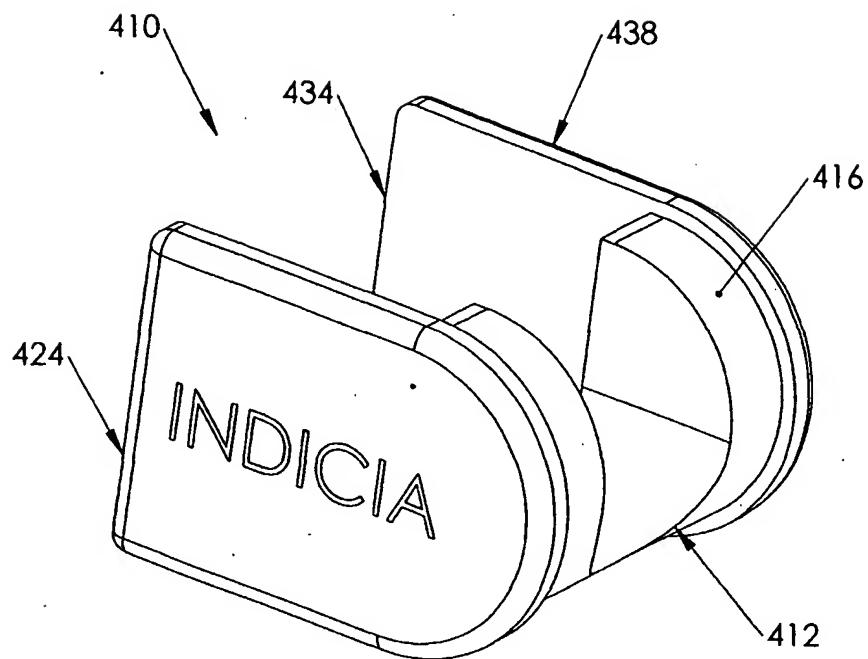


FIGURE 8

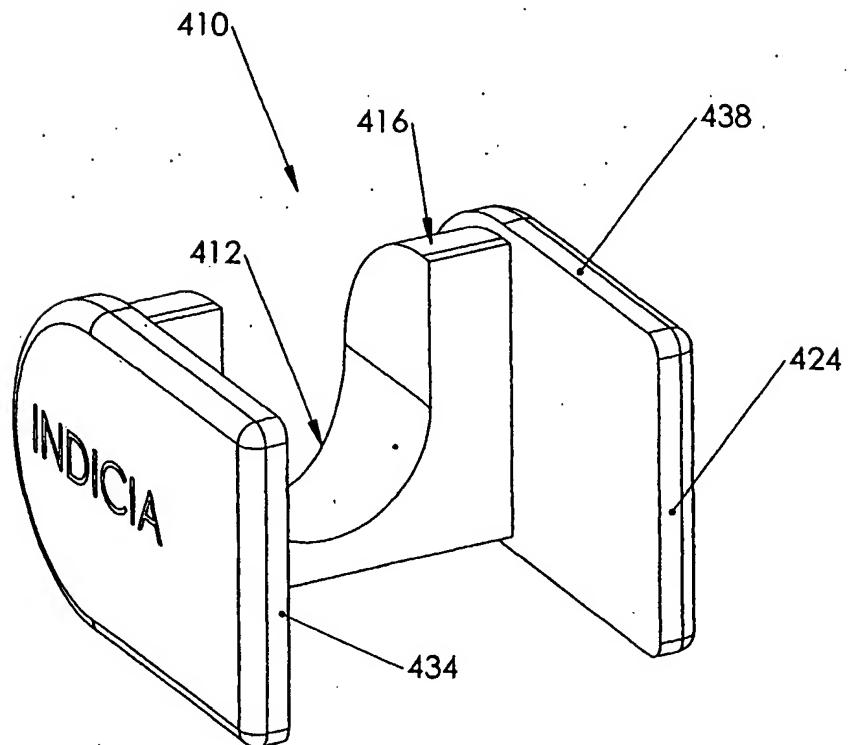


FIGURE 9

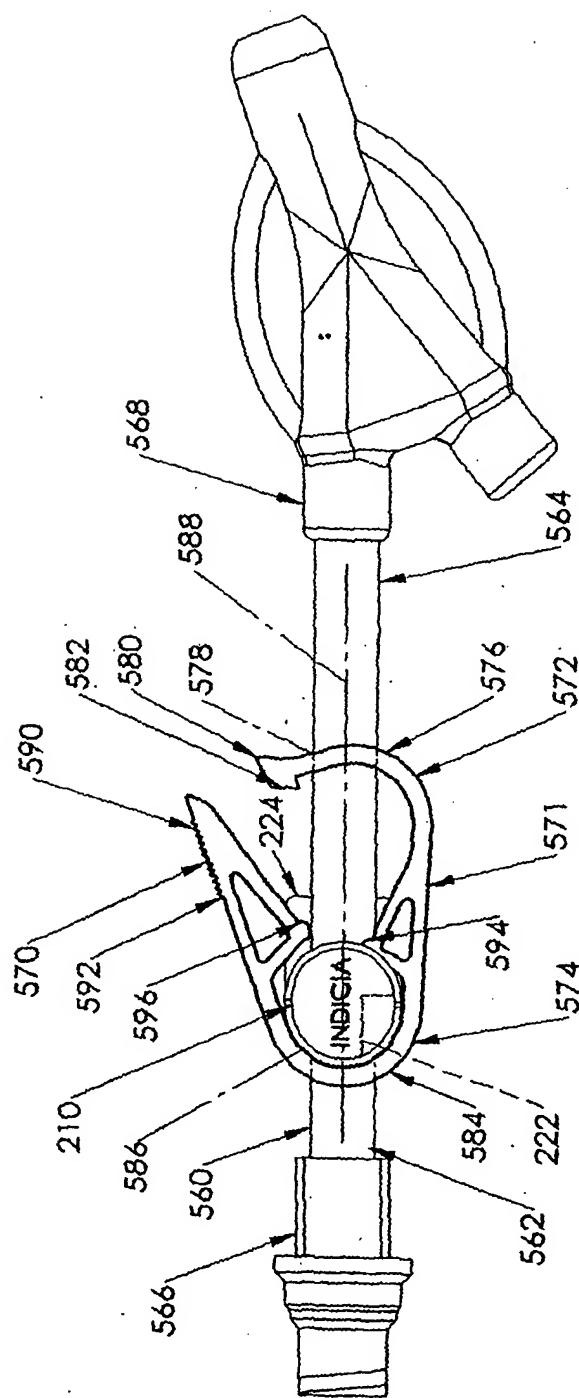


FIGURE 10

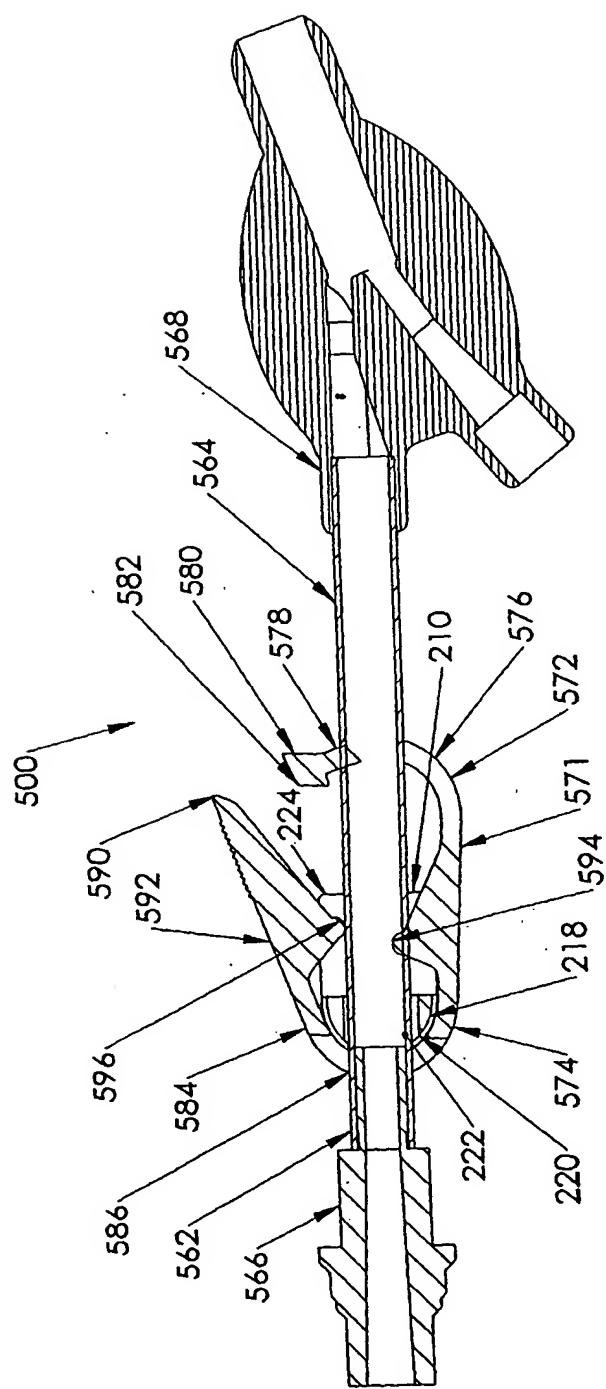
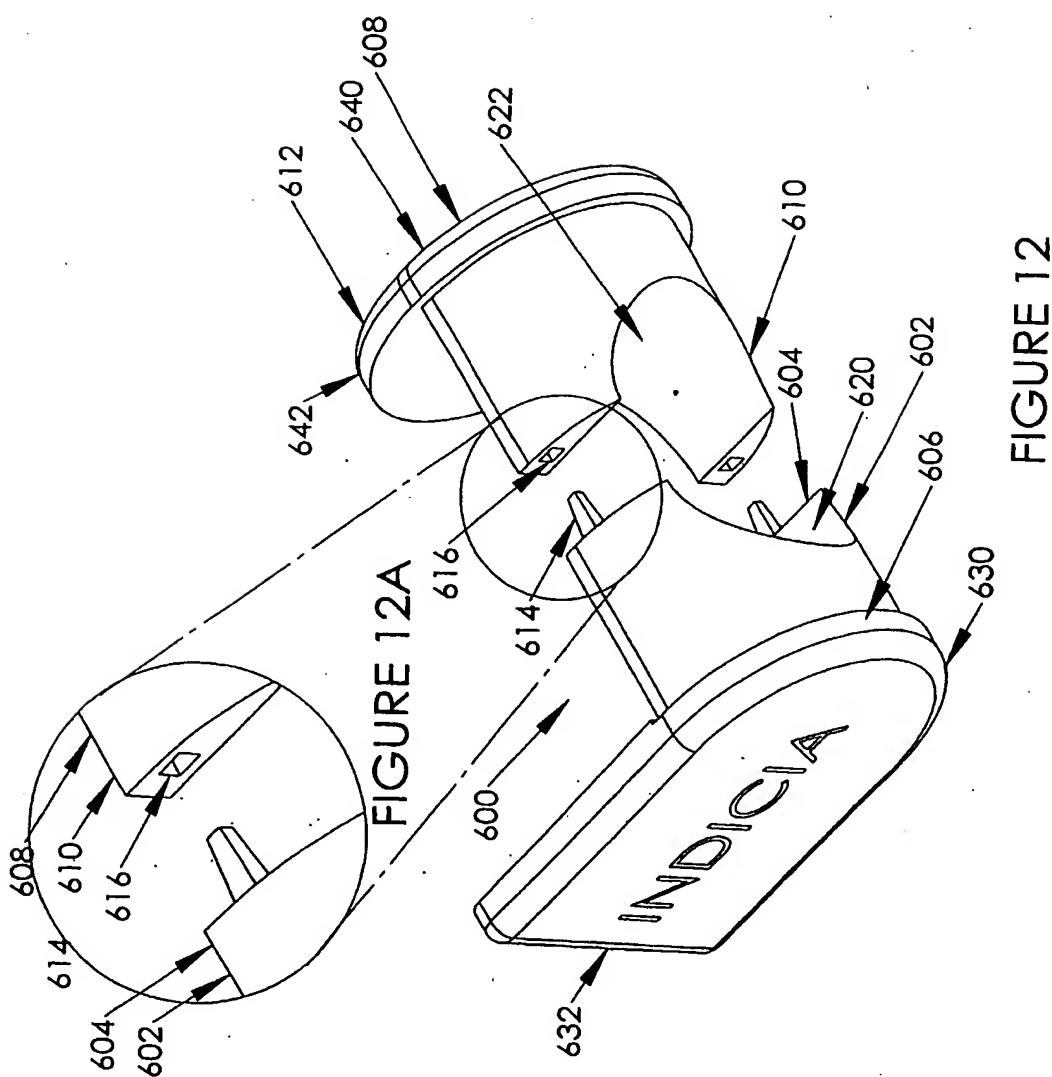


FIGURE 11



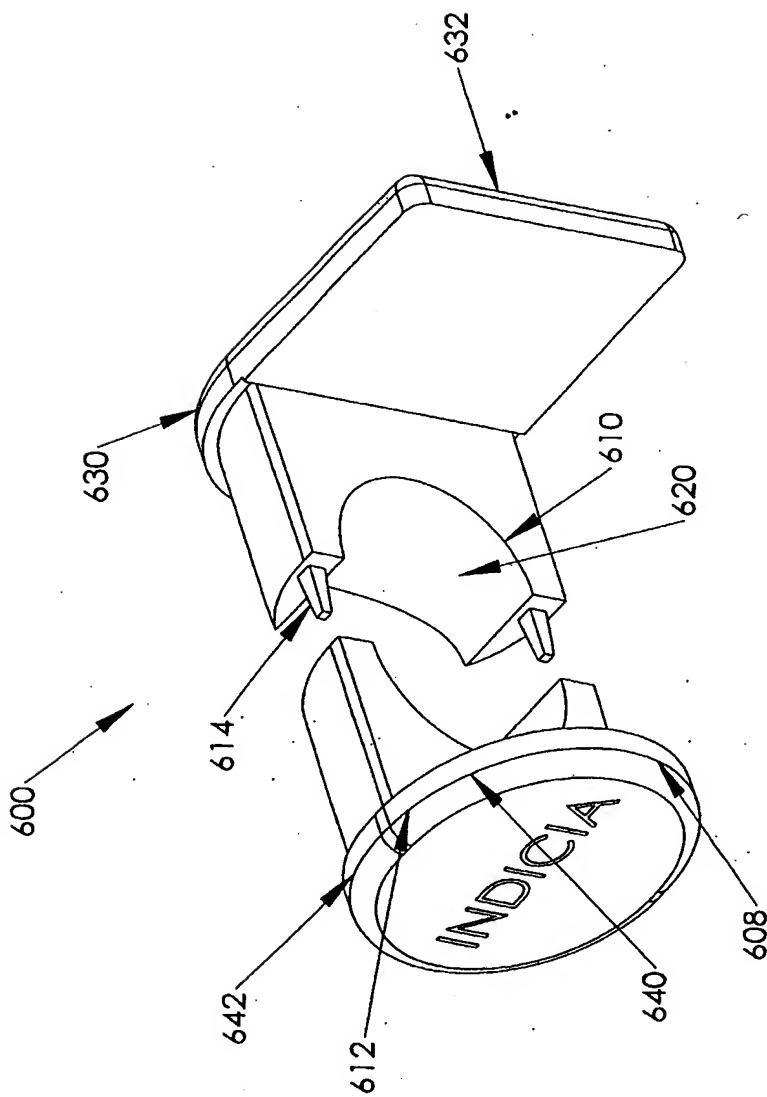


FIGURE 13